

**Preliminary Amendment filed May 30, 2006**  
**U.S. Patent Application Serial No. 10/646,818**

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended):      A method of bending a thin plate in a predetermined direction of a curve deformation by irradiating a laser beam onto the thin plate, comprising:  
irradiating a laser beam linearly onto the thin plate in a laser beam irradiation area between a first point and an end point in approximately the predetermined direction to curve the thin plate between the first point and the end point, wherein the laser beam is polarized in XY directions with a galvano scanner mirror and is condensed with a long focal length lens ;wherein the laser beam is a combined shape of characters.

1      Claim 2 (currently amended):      A method of bending a thin plate using a laser beam,

2      wherein

3      the laser beam is irradiated onto the thin plate in a laser beam irradiation area between a first point and an end point to curve the thin plate to a predetermined curvature to form a curve between the first point and the end point, wherein the laser beam is polarized in XY directions with a galvano scanner mirror and is condensed with a long focal length lens ;wherein the laser beam is a combined shape of characters.

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2           Claim 3 (currently amended):     A method of correcting a suspension used to mount a  
3           magnetic head in a hard disk drive, comprising:

4               either one of or both

5               measuring load on the suspension and obtaining a load adjustment amount from the  
6           measured load; and

7               measuring an angle of the suspension and obtaining an angle adjustment amount from  
8           the measured angle;

9               defining, by using irradiation shapes in advance, that a laser beam is linearly irradiated onto  
10          either one of or both a load curve portion and an angle adjustment portion of the suspension in a laser  
11          beam irradiation area between a first point and an end point in approximately the same direction as  
12          a curving direction, preparing combinations of irradiation shapes in advance, and selecting an  
13          irradiation shape combination corresponding to either one of or both the load adjustment amount and  
14          the angle adjustment amount; and

15              irradiating a laser beam based on the selected irradiation shape combination to curve the thin  
16          plate between the first point and the end point, wherein the laser beam is polarized in XY directions  
17          with a galvano scanner mirror and is condensed with a long focal length lens.

1           Claim 4 (currently amended):     A suspension correction method of adjusting an angle  
2           of the suspension by irradiating a laser beam onto a laser beam irradiation area for correcting an  
3           angle in plus or a laser beam irradiation area for correcting an angle in minus, based on an  
4           arrangement that

5           the suspension is formed in a thin plate shape as a whole, the header is connected to an  
6       outrigger from one end of a head mounting portion via a spring, and the outrigger consists of a curve  
7       portion reaching both sides of the head mounting portion, and a linear portion that continues from  
8       the curve portion, and

9           an XY axis is set around the head mounting portion, an area I to an area IV are formed on  
10      the XY coordinates with the X axis as a gimbal longitudinal direction, and the laser beam irradiation  
11      area for correcting the angle in plus or the laser beam irradiation area for correcting the angle in  
12      minus is set in the area I and the area III or the area II and the area IV respectively.

13           wherein the laser beam is polarized in XY directions with a galvano scanner mirror and is  
14           condensed with a long focal length lens.

1           Claim 5 (currently amended):           A suspension correction method of adjusting an angle  
2       of the suspension by irradiating a laser beam onto a laser beam irradiation area for correcting a pitch  
3       angle in plus or a laser beam irradiation area for correcting a pitch angle in minus, based on an  
4       arrangement that

5           the suspension is formed in a thin plate shape as a whole, the header is connected to an  
6       outrigger from one end of a head mounting portion via a spring, and the outrigger consists of a curve  
7       portion reaching both sides of the head mounting portion, and a linear portion that continues from  
8       the curve portion, and

9           a boundary is provided in a direction orthogonal with a gimbal longitudinal direction around  
10      the spring, a first area is formed at the head mounting side, a second area is formed at the opposite

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11 side, the laser beam irradiation area for correcting the pitch angle in plus is set in the first area, and  
12 the laser beam irradiation area for correcting the pitch angle in minus is set in the second area,  
13 wherein the laser beam is polarized in XY directions with a galvano scanner mirror and is  
14 condensed with a long focal length lens.

1 Claim 6 (withdrawn): A thin plate that has at least one portion thereof formed in a curve and  
2 beam shape, and that has a laser beam irradiation trajectory linearly formed in approximately the  
3 same direction as the curve direction.

1 Claim 7 (withdrawn): An apparatus for correcting a suspension used to mount a magnetic  
2 head in a hard disk drive, comprising:

3 either one of or both

4 a load measuring unit that measures a load on the suspension; and

5 an angle measuring unit that measures an angle of the suspension;

6 a laser beam irradiating unit that irradiates a laser beam in approximately the same direction  
7 as a curving direction onto either one of or both load correction area and an angle correction area of  
8 the suspension, based on either one of or both the load measured by the load measuring unit and the  
9 angle measured by the angle measuring unit; and

10 a conveyer unit that fixes the suspension onto a conveyer stage, and conveys the suspension  
11 while positioning the suspension on either one of or both the load measuring unit and the angle  
12 measuring unit, and the laser beam irradiating unit.

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1           Claim 8 (withdrawn): The suspension correction apparatus according to claim 7, wherein  
2           the laser beam irradiating unit includes a laser marker, and the laser beam irradiating unit has  
3           a storage to store a laser beam irradiation shape according to the laser marker as an irradiation shape.

1           Claim 9 (withdrawn): A computer program that makes a computer executes:

2           either one of or both

3                 defining, by using irradiation shapes in advance, that a laser beam is linearly  
4                 irradiated onto any one part of a load curve portion of a suspension in approximately the  
5                 same direction as a curving direction, and preparing combinations of irradiation shapes in  
6                 advance; and

7                 defining, by using irradiation shapes in advance, that a laser beam is linearly  
8                 irradiated onto any one part of an angle adjustment portion of a suspension in approximately  
9                 the same direction as a curving direction, and preparing combinations of irradiation shapes  
10                 in advance; and

11                 a selecting step of selecting an irradiation shape combination corresponding to either one of  
12                 or both the load adjustment amount and the angle adjustment amount obtained from a measured load  
13                 of a head of a hard disk drive that presses against a disk in the hard disk drive, and using the selected  
14                 combination to irradiate the laser beam.

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